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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,523	08/26/2003	Dong-Hoon Kim	21C-0065	4676

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EXAMINER

NEGRON, ISMAEL

ART UNIT PAPER NUMBER

2875

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,523	KIM ET AL.	
	Examiner	Art Unit	
	Ismael Negron	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-62 is/are pending in the application.
- 4a) Of the above claim(s) 21-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,19-21 and 58-62 is/are rejected.
- 7) ☒ Claim(s) 7-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on May 10, 2005 has been entered. Claims 1 and 3 have been amended. Claim 2 has been cancelled. Claims 58-62 have been added. Claims 1, 3-21 and 58-62 are still pending in this application, with claims 1 and 58 being independent.
2. The drawings were received on May 10, 2005. These drawings are acceptable.

Specification

3. The disclosure is objected to because of the following informalities: page 3, line 21 should read "Also, the light reflection pattern may include a plurality of dots having a ~~prim~~ **prism**".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 3-5, 19, 21, 58-60 and 62 rejected under 35 U.S.C. 102(a) as being anticipated by RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1).

5. RYU et al. discloses an illumination device having:

- **a light source**, Figure 4, reference number 19;
- **a light guide plate (as recited in Claim 1)**, Figure 4, reference number 2;
- **the light guide plate having a light incident surface for receiving light from the light source (as recited in Claim 1)**, as seen in Figure 4;
- **a first light emission surface (as recited in Claim 1)**, as seen in figures 6a-7b;
- **a second light emission surface (as recited in Claim 1)**, as seen in figures 6a-7b;
- **a light reflection pattern (as recited in Claim 1)**, Figure 4, reference number 21;
- **the reflection pattern being formed on the first light emission surface (as recited in Claim 1)**, paragraph 28, lines 4-6;
- **the reflection pattern being for reflecting light toward the second light emission surface (as recited in Claim 1)**, inherent, as part of the light hitting the pattern will always be reflected towards the opposite surface;
- **the light reflection pattern including a plurality of dots (as recited in Claim 1)**, as seen in Figure 4;

- **each of the dots having a geometrically regular pattern formed on a corresponding dot (as recited in Claim 1), Figure 6a, reference number 212;**
- **the geometrically regular pattern corresponding to a prism pattern on a surface of the dots (as recited in Claim 3), paragraph 33, lines 1-4;**
- **the reflection pattern having different densities of the dots at different areas on the first emission surface (as recited in Claim 4), as seen in Figure 4;**
- **the different densities being such that the closer an area is to the light incident surface, the lower the density of the dots at the area is (as recited in Claim 4), as seen in Figure 4;**
- **the dots have different sizes (as recited in Claim 5), as seen in Figure 4;**
- **the sizes being such that the more distant a dot is from the light incident surface, the larger is the dot (as recited in Claim 5), as seen in Figure 4;**
- **the dots being formed integrally on the first light emission surface (as recited in Claim 19), paragraph 33, lines 1-4; and**
- **the light reflection pattern being made of material having a refraction index equal to that of the light guide plate (as recited in Claim 21), as evidenced in paragraph 33, lines 1-4.**

6. Claims 1, 3-5, 19, 21, 58-60 and 62 rejected under 35 U.S.C. 102(a) as being anticipated by RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1).
7. RYU et al. discloses an illumination device having:
- **a light source**, Figure 4, reference number 19;
 - **a light guide plate (as recited in Claim 58)**, Figure 4, reference number 2;
 - **the light guide plate having a light incident surface for receiving light from the light source (as recited in Claim 58)**, as seen in Figure 4;
 - **a first light emission surface (as recited in Claim 58)**, as seen in figures 6a-7b;
 - **a second light emission surface (as recited in Claim 58)**, as seen in figures 6a-7b;
 - **the emission surfaces being for emitting light at a first light emission angle with respect to the emission surfaces (as recited in Claim 58)**, inherent, as light will always exit the surface at some angle;
 - **a light reflection pattern formed on the first light emission surface (as recited in Claim 58)**, Figure 4, reference number 21;
 - **the reflection pattern being for reflecting light toward the second light emission surface (as recited in Claim 58)**, inherent,

as part of the light hitting the pattern will always be reflected towards the opposite surface;

- **the light reflection pattern including a plurality of dots (as recited in Claim 58), Figure 4, reference number 21;**
- **each of the dots having a prism pattern on a corresponding dot (as recited in Claim 58), Figure 6a, reference number 212;**
- **the reflection pattern having different densities of the dots at different areas on the first emission surface (as recited in Claim 59), as seen in Figure 4;**
- **the different densities being such that the closer an area is to the light incident surface, the lower the density of the dots at the area is (as recited in Claim 59), as seen in Figure 4;**
- **the dots have different sizes (as recited in Claim 60), as seen in Figure 4;**
- **the sizes being such that the more distant a dot is from the light incident surface, the larger is the dot (as recited in Claim 60), as seen in Figure 4; and**
- **the dots being formed integrally on the first light emission surface (as recited in Claim 62), paragraph 33, lines 1-4.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1) in view of ASHALL(U.S. Pat. 5,390,436).

9. RYU et al. discloses an illumination device having:

- **a light source**, Figure 4, reference number 19;
- **a light guide plate (as recited in Claim 1)**, Figure 4, reference number 2;
- **the light guide plate having a light incident surface for receiving light from the light source (as recited in Claim 1)**, as seen in Figure 4;
- **a first light emission surface (as recited in Claim 1)**, as seen in figures 6a-7b;
- **a second light emission surface (as recited in Claim 1)**, as seen in figures 6a-7b;
- **a light reflection pattern (as recited in Claim 1)**, Figure 4, reference number 21;

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- **the reflection pattern being formed on the first light emission surface (as recited in Claim 1), paragraph 28, lines 4-6;**
- **the reflection pattern being for reflecting light toward the second light emission surface (as recited in Claim 1), inherent, as part of the light hitting the pattern will always be reflected towards the opposite surface;**
- **the light reflection pattern including a plurality of dots (as recited in Claim 1), as seen in Figure 4;**
- **each of the dots having a geometrically regular pattern formed on a corresponding dot (as recited in Claim 1), Figure 6a, reference number 212;**
- **the geometrically regular pattern corresponding to a prism pattern on a surface of the dots (as recited in Claim 3), paragraph 33, lines 1-4;**
- **the reflection pattern having different densities of the dots at different areas on the first emission surface (as recited in Claim 4), as seen in Figure 4; and**
- **the different densities being such that the closer an area is to the light incident surface, the lower the density of the dots at the area is (as recited in Claim 4), as seen in Figure 4.**

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10. RYU et al. discloses all the limitations of the claims, except:

- the dots having a substantially identical size (as recited in Claim 6), column 2, lines 23-25;
- the a number of the dots at a unit area closer to the incident surface is smaller than a number of the dots at a unit area farther from the incident surface (as recited in Claim 6), column 2, lines 23-25; and
- the dots being formed on a separate sheet attached to the first light emission surface (as recited in Claim 20), column 2, lines 36-39.

11. ASHALL discloses a light guide plate having:

- **a light incident surface (as recited in Claim 1), as seen in Figure 1;**
- **the incident surface being for receiving light (as recited in Claim 1), inherent;**
- **a first light emission surface (as recited in Claim 1), Figure 1, reference number 12;**
- **a second light emission surface (as recited in Claim 1), Figure 1, reference number 11;**
- **a light reflection pattern (as recited in Claim 1), Figure 1, reference number 13;**
- **the reflection pattern being formed on the first light emission surface (as recited in Claim 1), column 3, lines 15-17;**

- **the reflection pattern being for reflecting light toward the second light emission surface (as recited in Claim 1), inherent, as part of the light hitting the pattern will always be reflected towards the opposite surface;**
- **the light reflection pattern including a plurality of dots (as recited in Claim 3), column 2, lines 3-6;**
- **the pattern having a prism pattern on a surface of the dots (as recited in Claim 3), inherent, as the surface of the dots will always have some roughness;**
- **the reflection pattern having different densities of the dots at different areas on the first emission surface (as recited in Claim 4), column 2, lines 20-22;**
- **the different densities being such that the closer an area is to the light incident surface, the lower the density of the dots at the area is (as recited in Claim 4), column 2, lines 20-22;**
- **the dots having a substantially identical size (as recited in Claim 6), column 2, lines 23-25;**
- **the a number of the dots at a unit area closer to the incident surface is smaller than a number of the dots at a unit area farther from the incident surface (as recited in Claim 6), column 2, lines 23-25; and**

- **the dots being formed on a separate sheet attached to the first light emission surface (as recited in Claim 20), column 2, lines 36-39.**

12. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to vary the density of the reflection patterns by keeping the size of the dots constant while varying the number of dots per area, since such method is old and well known in the art method for varying such densities, as per the teachings of ASHALL.

13. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to form the dots on a separate sheet and attaching such sheet to the light guide to be able to provide the dots to light guides already in manufacture, as per the teachings of ASHALL.

14. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1) in view of ASHALL(U.S. Pat. 5,390,436).

15. RYU et al. discloses an illumination device having:

- **a light source**, Figure 4, reference number 19;
- **a light guide plate (as recited in Claim 58)**, Figure 4, reference number 2;

- **the light guide plate having a light incident surface for receiving light from the light source (as recited in Claim 58), as seen in Figure 4;**
- **a first light emission surface (as recited in Claim 58), as seen in figures 6a-7b;**
- **a second light emission surface (as recited in Claim 58), as seen in figures 6a-7b;**
- **the emission surfaces being for emitting light at a first light emission angle with respect to the emission surfaces (as recited in Claim 58), inherent, as light will always exit the surface at some angle;**
- **a light reflection pattern formed on the first light emission surface (as recited in Claim 58), Figure 4, reference number 21;**
- **the reflection pattern being for reflecting light toward the second light emission surface (as recited in Claim 58), inherent, as part of the light hitting the pattern will always be reflected towards the opposite surface;**
- **the light reflection pattern including a plurality of dots (as recited in Claim 58), Figure 4, reference number 21;**
- **each of the dots having a prism pattern on a corresponding dot (as recited in Claim 58), Figure 6a, reference number 212;**

- **the reflection pattern having different densities of the dots at different areas on the first emission surface (as recited in Claim 59), as seen in Figure 4; and**
- **the different densities being such that the closer an area is to the light incident surface, the lower the density of the dots at the area is (as recited in Claim 59), as seen in Figure 4.**

16. RYU et al. discloses all the limitations of the claims, except:

- the dots having a substantially identical size (as recited in Claim 61), column 2, lines 23-25; and
- the a number of the dots at a unit area closer to the incident surface is smaller than a number of the dots at a unit area farther from the incident surface (as recited in Claim 61), column 2, lines 23-25

17. ASHALL discloses a light guide plate having:

- **a light incident surface (as recited in Claim 58), as seen in Figure 1;**
- **the incident surface being for receiving light (as recited in Claim 58), inherent;**
- **a first light emission surface (as recited in Claim 58), Figure 1, reference number 12;**
- **a second light emission surface (as recited in Claim 58), Figure 1, reference number 11;**

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- **a light reflection pattern (as recited in Claim 58), Figure 1, reference number 13;**
- **the reflection pattern being formed on the first light emission surface (as recited in Claim 58), column 3, lines 15-17;**
- **the reflection pattern being for reflecting light toward the second light emission surface (as recited in Claim 58), inherent, as part of the light hitting the pattern will always be reflected towards the opposite surface;**
- **the light reflection pattern including a plurality of dots (as recited in Claim 58), column 2, lines 3-6;**
- **the pattern having a prism pattern on a surface of the dots (as recited in Claim 58), inherent, as the surface of the dots will always have some roughness;**
- **the reflection pattern having different densities of the dots at different areas on the first emission surface (as recited in Claim 59), column 2, lines 20-22;**
- **the different densities being such that the closer an area is to the light incident surface, the lower the density of the dots at the area is (as recited in Claim 59), column 2, lines 20-22;**
- **the dots having a substantially identical size (as recited in Claim 61), column 2, lines 23-25; and**

- **the a number of the dots at a unit area closer to the incident surface is smaller than a number of the dots at a unit area farther from the incident surface (as recited in Claim 61),**
column 2, lines 23-25.

18. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to vary the density of the reflection patterns by keeping the size of the dots constant while varying the number of dots per area, since such method is old and well known in the art method for varying such densities, as per the teachings of ASHALL.

Relevant Prior Art

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishikawa et al. (U.S. Pat. 5,600,455), **Ho** (U.S. Pat. Pub. No. 2004/0125588 A1) and **Park et al.** (U.S. Pat. 6,843,587) disclose light guides featuring a plurality of dots disposed on a surface of the light guide, the dots having a prism pattern formed on one surface.

Response to Arguments

20. Applicant's arguments with respect to claims 1 and 58 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

21. Claims 7-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches a light guide plate having a first and second light emission surfaces, and a light reflecting pattern formed on the first emission surface. The pattern includes a plurality of dots for reflecting light from the first surface toward the second surface, such reflected light exiting the second surface at a greater angle than light emitted by the first surface. Each dot having light reflecting surfaces elongated in a selected direction, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically the dots having elongated light reflecting surfaces, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

24. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (703) 308-6086. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (703) 305-4939. The facsimile machine number for the Art Group is (703) 308-7382.

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26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.



THOMAS M. SEMBER
PRIMARY EXAMINER


Inr

August 3, 2005